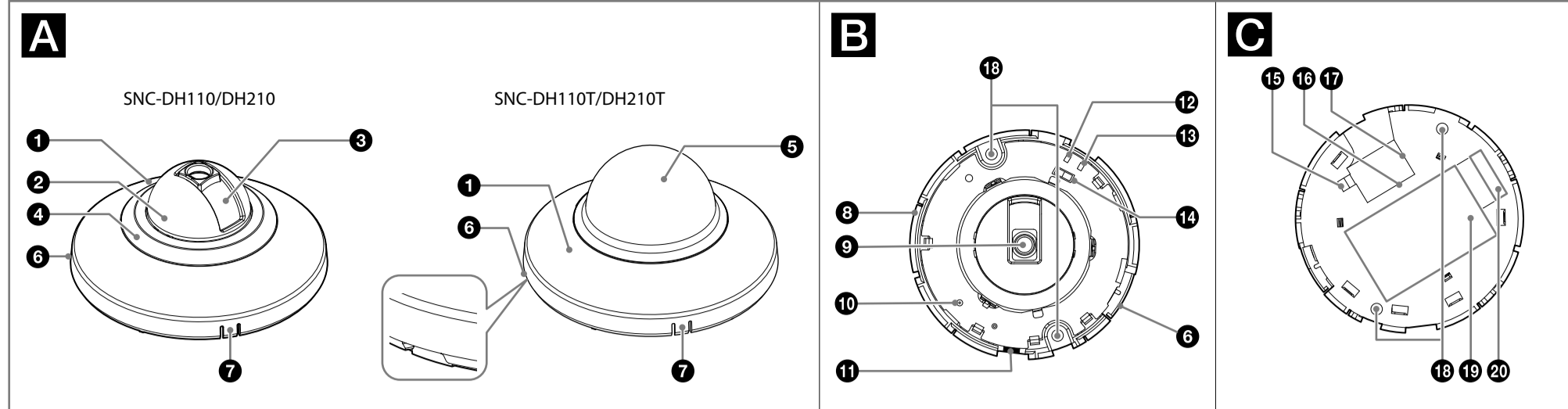# SONY

Network Camera

Installation Manual

Before operating the unit, please read this manual thoroughly and retain it for future reference.

IPELA

HD

SNC-DH110/DH110T
SNC-DH210/DH210T

Owner's Record

The model and serial numbers are located on the bottom. Record these numbers in the spaces provided below.
Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. _____ Serial No. _____

WARNING

To reduce a risk of fire or electric shock, do not expose this product to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

WARNING
This installation should be made by a qualified service person and should conform to all local codes.

WARNING
A readily accessible disconnect device shall be incorporated in the building installation wiring.

WARNING (for Installers only)
Instructions for installing the equipment on the ceiling or the wall:
After the installation, ensure the connection is capable of supporting at least a force of 50 Newtons (N) downwards.

CAUTION
The rating label is located on the bottom.

CAUTION
Use shielded LAN cables to install the SNC-DH110/DH110T.

CAUTION for LAN port
For safety reason, do not connect the LAN port to any network devices that might have excessive voltage.
The LAN port of this unit is to be connected only to the devices whose power feeding meets the requirements for SELV (Safety Extra Low Voltage) and complies with Limited Power Source according to IEC 60950-1.
Use IEEE802.3af standard compliant devices.

For customers in the U.S.A.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.
All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B or Part 15 of FCC Rules.
Model SNC-DH110/DH110T
 NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  — Reorient or relocate the receiving antenna.
  — Increase the separation between the equipment and receiver.
  — Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  — Consult the dealer or an experienced radio/TV technician for help.
Model SNC-DH210/DH210T
 NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

For customers in Canada
Model SNC-DH110/DH110T
 This Class B digital apparatus complies with Canadian ICES-003.
 Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.
Model SNC-DH210/DH210T
 This Class A digital apparatus complies with Canadian ICES-003.
 Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

For the customers in Europe
The manufacturer of this product is Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japan.
The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany.
For any service or guarantee matters please refer to the addresses given in separate service or guarantee documents.

For the customers in Europe, Australia and New Zealand

WARNING (for model SNC-DH210/DH210T only)
This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.
In the case that interference should occur, consult your nearest authorized Sony service facility.
This apparatus shall not be used in the residential area.

ATTENTION
The electromagnetic fields at specific frequencies may influence the picture of the unit.

A   SNC-DH110/DH210   SNC-DH110T/DH210T
B
C

Notes on Use

Before Use
- If you find condensation before use, leave the camera out for long enough and do not turn on the power until the condensation disappear.
- Remove static electricity before installation and operation.

Data and security
- You should keep in mind that the images or audio you are monitoring may be protected by privacy and other legal rights, and the responsibility for making sure you are complying with applicable laws is yours alone.
- Access to the images and audio is protected only by a user name and the password you set up. No further authentication is provided nor should you presume that any other protective filtering is done by the service. Since the service is Internet-based, there is a risk that the image or audio you are monitoring can be viewed or used by a third-party via the network.
- SONY IS NOT RESPONSIBLE, AND ASSUMES ABSOLUTELY NO LIABILITY TO YOU OR ANYONE ELSE, FOR SERVICE INTERRUPTIONS OR DISCONTINUATIONS OR EVEN SERVICE CANCELLATION. THE SERVICE IS PROVIDED AS-IS, AND SONY DISCLAIMS AND EXCLUDES ALL WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE SERVICE INCLUDING, BUT NOT LIMITED TO, ANY OR ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR THAT IT WILL OPERATE ERROR-FREE OR CONTINUOUSLY.
- Always make a test recording, and verify that it was recorded successfully. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF FAILURE OF THIS UNIT OR ITS RECORDING MEDIA, EXTERNAL STORAGE SYSTEMS OR ANY OTHER MEDIA OR STORAGE SYSTEMS TO RECORD CONTENT OF ANY TYPE.
- Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.
- If you lose data by using this unit, SONY accepts no responsibility for restoration of the data.

Personal information
- The images taken by the system using this device can identify individuals and thus they fall under "personal information" stipulated in the "Act on the Protection of Personal Information". Please handle the video data appropriately according to law.
- Information recorded using this product may also be "personal information". Upon disposal, transfer, repair, or any other occasion where this product or storage media is passed on to a third party, practice due care in its handling.

Operating or storage location
Do not shoot an extremely bright object (an illumination, the sun, etc.). Also, avoid operating or storing the camera in the following locations, as these can be a cause of a malfunction.
- Extremely hot or cold places (Operating temperature: 0°C to 50°C [32°F to 122°F])
- Exposed to direct sunlight for a long time, or close to heating equipment (e.g., near heaters)
- Close to sources of strong magnetism
- Close to sources of powerful electromagnetic radiation, such as radios or TV transmitters
- Locations subject to strong vibration or shock
- Humid or dusty locations
- Locations exposed to rain
- Locations under the influence of fluorescent light or reflection of a window
- Under an unsteady light (the image will flicker.)

Ventilation
To prevent heat buildup, do not block air circulation around the camera.

Power supply
- The power of this model is supplied by network cable.
- Use the network cable UTP, category-5.
- Damage to the network cable may result in fire or electric shock.

Transportation
- Always turn off the power when carrying.
- When transporting the camera, repack it as originally packed at the factory or in materials of equal quality.

Cleaning
- Use a blower to remove dust from the lens.
- Use a soft, dry cloth to clean the external surfaces of the camera. Stubborn stains can be removed using a soft cloth dampened with a small quantity of detergent solution, then wipe dry.
- Do not use volatile solvents such as alcohol, benzene or thinners as they may damage the surface finishes.

Note on laser beams
Laser beams may damage image sensors. You are cautioned that the surface of image sensors should not be exposed to laser beam radiation in an environment where a laser beam device is used.

Phenomena Specific to Image Sensors

The following phenomena that may occur in images are specific to image sensors. They do not indicate a malfunction.

White flecks
Although the image sensors are produced with high-precision technologies, fine white flecks may be generated on the screen in rare cases, caused by cosmic rays, etc.
This is related to the principle of image sensors and is not a malfunction.
The white flecks especially tend to be seen in the following cases:
— when operating at a high environmental temperature
— when you have raised the gain (sensitivity)
— when using the slow shutter

Aliasing
When fine patterns, stripes, or lines are shot, they may appear jagged or flicker.

About the Supplied Manuals

Installation Manual (this document)
This Installation Manual describes the names and functions of parts and controls of the Network Camera, gives connection examples and explains how to set up the camera. Be sure to read the Installation Manual before operating.
The pictures of SNC-DH210T are mainly used in explanatory examples.

User's Guide (stored in the CD-ROM)
The User's Guide describes how to set up the camera and how to control the camera via a Web browser.
After installing and connecting the camera correctly, operate referring to this User's Guide.

Using the CD-ROM Manuals

The supplied CD-ROM disc includes the User's Guides for this unit in PDF format.

Preparations
The Adobe Reader Version 6.0 or higher must be installed on your computer in order to use the guides stored in the CD-ROM disc.

Note
If Adobe Reader is not installed, it may be downloaded from the following URL:
http://www.adobe.com/

Reading the manual in the CD-ROM

1 Insert the CD-ROM in your CD-ROM drive.
 A cover page appears automatically in your Web browser.
 If it does not appear automatically in the Web browser, double-click on the index.htm file on the CD-ROM.

2 Select and click on the manual that you want to read.
 This opens the PDF file of the manual.
 Clicking an item in the Table of Contents allows you jump to the relevant page.

Notes
- The files may not be displayed properly, depending on the version of Adobe Reader. In this case, install the latest version, which you can download from the URL mentioned in "Preparations" above.
- If you have lost or damaged the CD-ROM, you can purchase replacement. Contact your Sony service representative.
Adobe and Acrobat Reader are trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Location and Function of Part

Appearance   A

1 **Dome casing**

2 **PT (Pan/Tilt) casing**
Care should be taken while turning the PT casing, as it may separate if pulled it too hard.
Should this occur, see"When the PT casing separates"on the reverse side, and install the casing correctly.

3 **lens casing**

4 **Normal cover (SNC-DH110/DH210 only)**

5 **Clear cover (SNC-DH110T/DH210T only)**

6 **Hook**
Press the hook inward and meanwhile turn the dome casing, then remove the dome casing from the camera unit.

7 **Knockout type flange**
When threading the cables through the side of the camera, use pliers to break off the knockout flange (with pliers, etc.).

TOP   B

The figure shows the camera without the dome casing and the cover.

8 **Camera unit**

9 **Lens**
A fixed-focus lens is mounted.

10 **Reset switch**
If you hold down this switch for about 40 seconds when the camera is on normal operation, the POWER indicator turns off and the NETWORK indicator lights up in orange, and then the camera will be reset to the factory default settings and restarted.

11 **MONITOR out connector [AV minijack]**
Output the composite video signal from the camera.
Monitor out is used when you adjust the view angle.
◆ Before use, see the procedure from"Setting the view angle of the monitor out".

Note
Before use, it is neseccery to connect to the PC and change the system setting.

12 **POWER indicator (Green)**
When the power is supplied to the camera, the camera starts checking the system. If the system is normal, this indicator lights up.

13 **NETWORK indicator (Green/Orange)**
The indicator lights up or flashes when the camera is connected to the network. The indicator is off when the camera is not connected to the network. When 100BASE-TX is connected, the indicator turns green. When 10BASE-T is connected, the indicator turns orange.

14 **NTSC/PAL switch**
Switching the video output.

Bottom   C

15 **Fall-prevention rope mounting hole**
When installing the camera on a ceiling or a wall, be sure to secure a fall-prevention rope (not supplied) to this hole for safety.

16 **LAN connector (PoE) [RJ-45]**
Use the network cable (UTP, category-5) for network communications and PoE* power supply.
LAN cable [RJ-45] is connected when the unit comes from the factory.
◆ See "Connect to the Network" for connection.
(* PoE: The acronym for Power over Ethernet. IEEE 802.3af standard compliant devices.)

17 **Sensor Input**
Connect the supplied sensor input cable. (The cable is not connected when the unit comes from the factory.)

Sensor input cable color	Signal
Red	Sensor input +
White	Sensor input – (GND)

◆ For details on function and required settings, refer to the User's Guide stored in the supplied CD-ROM.
◆ For the wiring, see "Wiring diagram for sensor input".

18 **Camera installation hole (2 positions)**
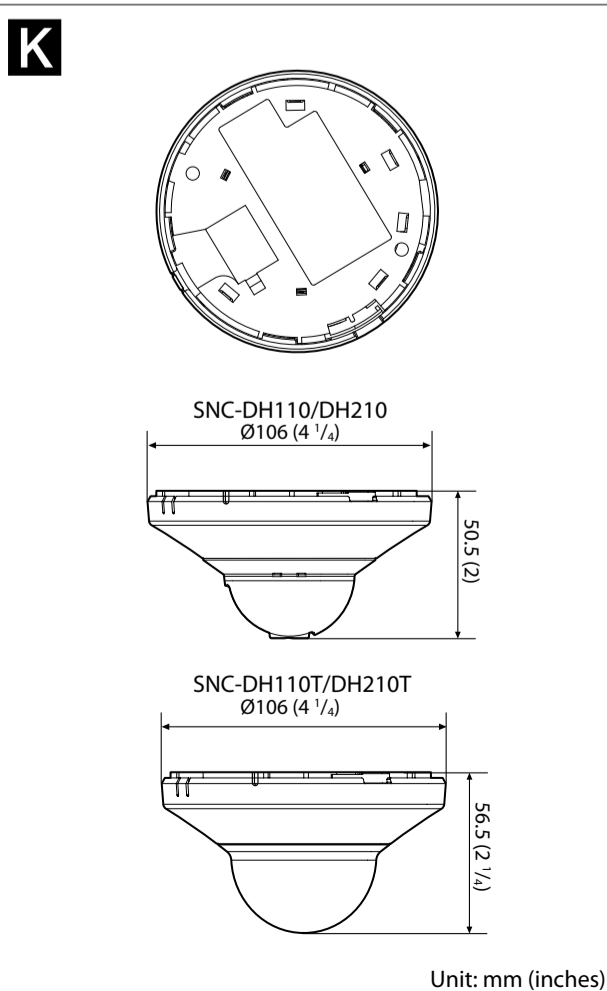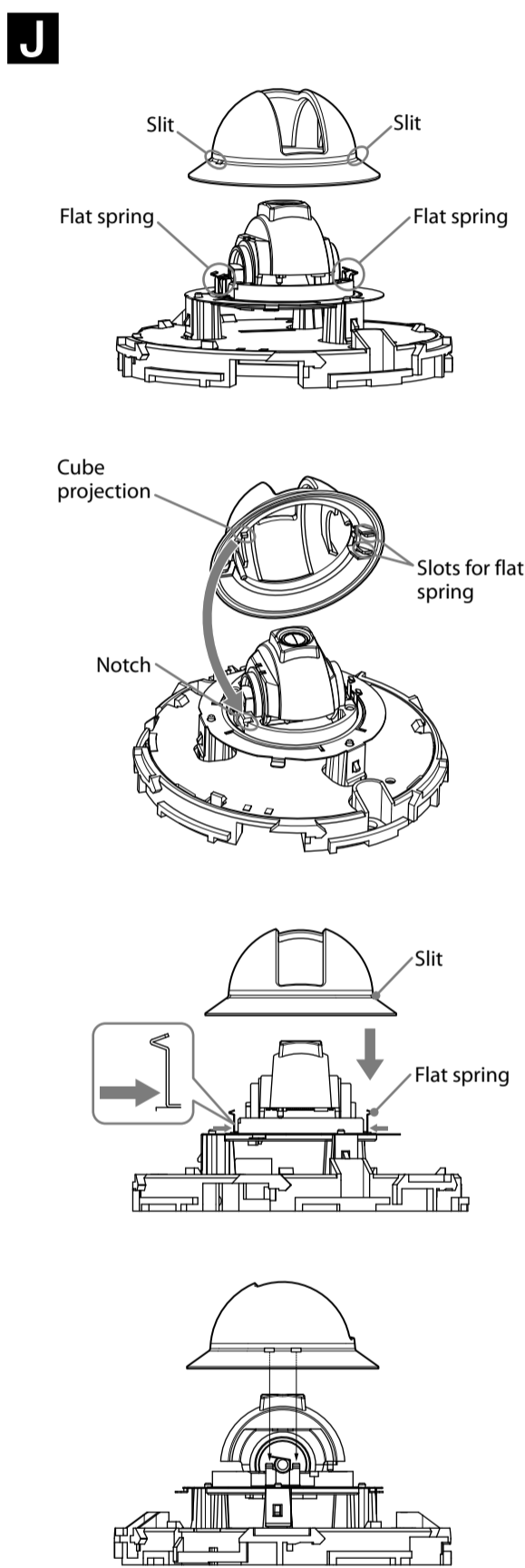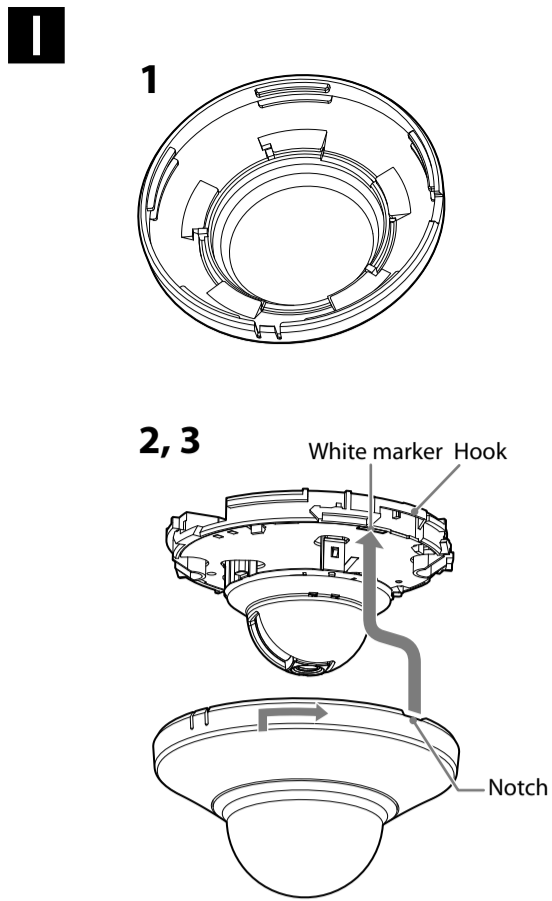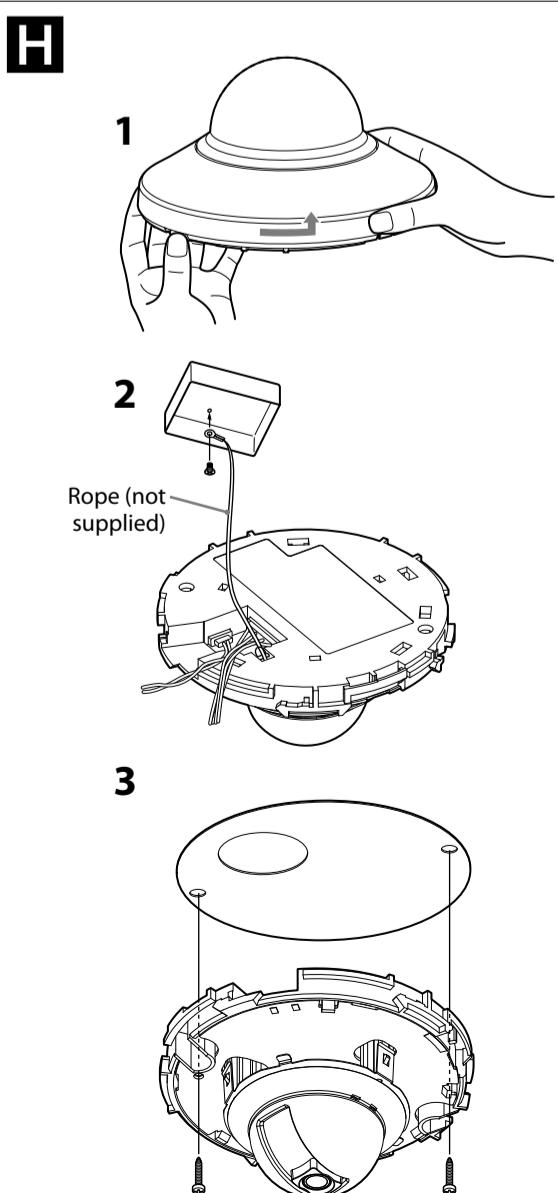Make sure to tighten the screws securely when installing the camera.

19 **Model name label**
This label shows device information, such as the model name and serial number.

20 **MAC Address label**
Indicates the MAC address of this camera.

D

LAN connector
Sensor input

E

Rope (not supplied)

F

Adjustable angle of lens (Tilt)

SNC-DH110/DH110T: 57°
SNC-DH210/DH210T: 60°

Adjustable angle of lens (Pan)

125°
222°

Hole for connecting cables Ø28
83.5 (3 ⅜)

Screw hole

Unit: mm (inches)

G

Ceiling
LAN cable
10BASE-T/100BASE-TX
Network cable (straight, not supplied)
PoE supported device (such as a hub)

H

1

2

Rope (not supplied)

3

I

1

2, 3

White marker Hook

Notch

J

Slit   Slit

Flat spring   Flat spring

Cube projection

Slots for flat spring

Notch

Slit

Flat spring

K

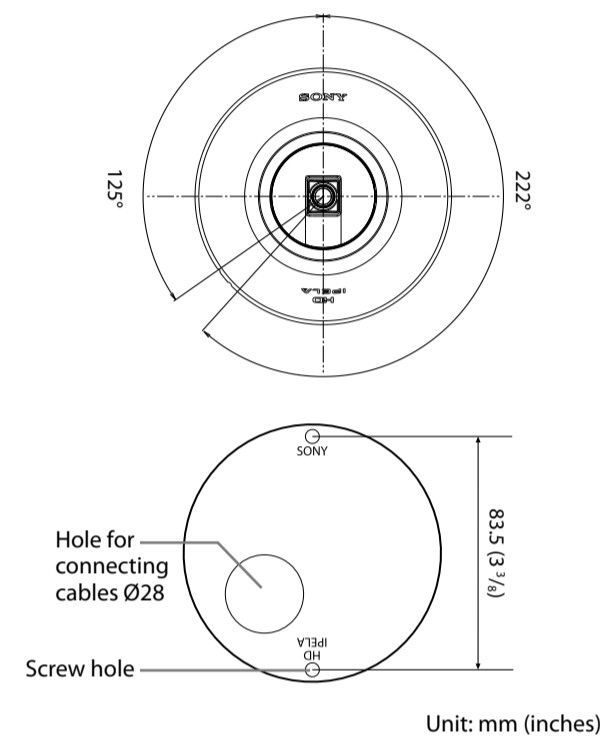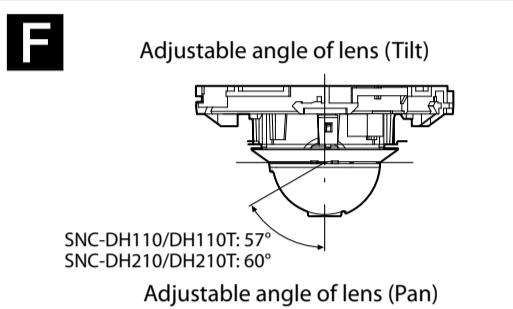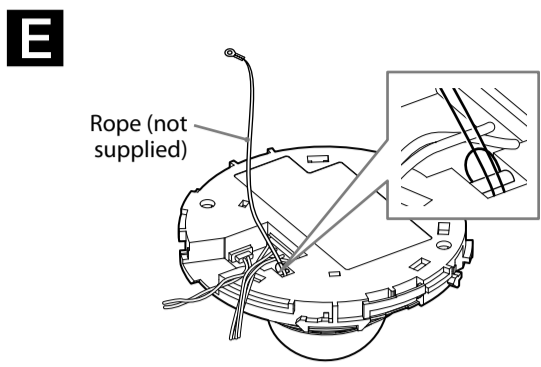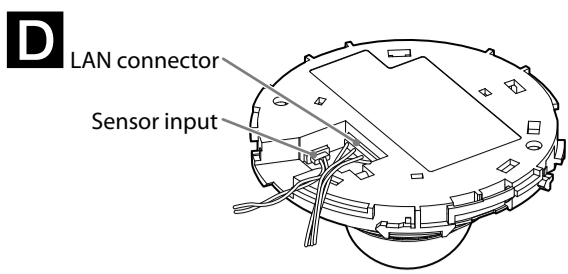SNC-DH110/DH210
Ø106 (4 ¼)

50.5 (2)

SNC-DH110T/DH210T
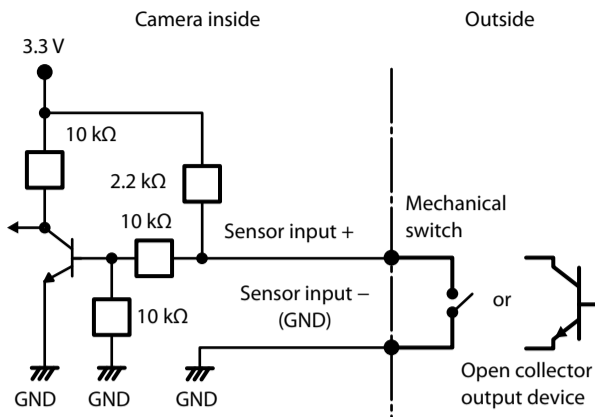Ø106 (4 ¼)

56.5 (2 ¼)

Unit: mm (inches)

Preparations

Connect the sensor input cable to the camera   **D**

Before installation, connect the supplied sensor input cable to the camera according to your usage environment.

Wiring diagram for sensor input

Mechanical switch/open collector output device

Camera inside   Outside

3.3 V

10 kΩ

2.2 kΩ

10 kΩ   Sensor input +

10 kΩ   Sensor input – (GND)

Mechanical switch

or

GND GND GND   Open collector output device

Attaching the fall-prevention rope   **E**

When you install the camera on a ceiling or a high location, be sure to attach a fall-prevention rope (not supplied) to prevent the camera from falling. Thread the fall-prevention rope through the hole on the camera as in the illustration, and then fix it to the junction box on the ceiling or wall with a screw (not supplied).
For details about the fall-prevention rope, please consult the store of purchase or an authorized Sony dealer.

Installation

WARNING

- If you attach the camera in the height such as the wall or the ceiling, etc., entrust the installation to an experienced contractor or installer.
- If you install the camera on the ceiling, ensure that the ceiling is strong enough to withstand the weight of the camera and then install the camera securely. If the ceiling is not strong enough, the camera may fall and cause serious injury.
- To prevent the camera from falling, make sure to attach the fall-prevention rope (not supplied).
- If you attach the camera to the ceiling, check periodically, at least once a year, to ensure that the connection has not loosened. If conditions warrant, make this periodic check more frequently.

Deciding the Installation Location of the Camera   **F**

After deciding the direction in which the camera will shoot, use the supplied template to decide the location of the hole for connecting cables and required screw holes.
Make the hole for connecting cables (Ø28 mm).

Note

When threading the cables through the side of the camera, there is no need to make the hole for connecting cables.

Connect to the Network   **G**

Connect the LAN connector of the camera to a PoE* supported device (such as a hub) using the network cable (straight, not supplied).
The electrical power is supplied through the network cable. For details, refer to the instruction manuals of the PoE supported devices.
(* PoE: The acronym for Power over Ethernet. IEEE 802.3af standard compliant devices.)

Installing the Camera   **H**

1 **Remove the dome casing.**
   Press the hook and meanwhile turn the dome casing in the counterclockwise direction, then remove the dome casing from the camera unit.
2 **Fix the fall-prevention rope (not supplied) to the ceiling or wall.**
3 **Install the camera.**
   The supplied template indicates the location of screw holes to be made in the ceiling or wall. Align with the 2 screw holes in the camera, and fix the screws (not supplied).

Mounting screws
The required mounting screws differ depending on the installation location and its material. (Mounting screws are not supplied.)
Steel wall or ceiling: Use M4 bolts and nuts.
Wooden wall or ceiling: Use M4 tapping screws. The panel thickness must be 15 mm (⅝ inch) or more.
Concrete wall: Use anchors, bolts and plugs suitable for concrete walls.
Junction box: Use screws to match the holes on the junction box.

WARNING

The required mounting screws differ depending on the installation location and its material. If you do not secure the camera with the appropriate mounting screws, the camera may fall off.

Caution

Take care not to trap the cables between the camera and the ceiling or the wall. If the cable is trapped, it may cause a fire or electric shock due to breaking.

Adjusting the Camera Direction and Coverage

Turn the PT casing and lens casing to adjust the pan and tilt directions separately, then you are able to turn the lens in the desired shoot direction.
You can turn the PT casing by holding it. If you pull the PT casing, it may separate.

Note

As you rotate the lens, it may reach a stop. In this case, do not force the lens; instead, turn the lens in the opposite direction to select the shoot direction.
Do not pull the PT casing, as it may separate. Should this occur, see "When the PT casing separates", and install the casing correctly.

Using the monitor out

Setting the view angle of the monitor out

1 **Make sure the POWER indicator lights up.**
2 **Select the installation tab in system setting menu, then set monitor out to On.**
3 **Connect the AV cable to the monitor out [AV minijack].**
4 **Adjust the view angle.**
5 **Select the installation tab in system setting menu, then set monitor out to Off.**
6 **Disconnect the AV cable.**
◆ The system setting is changed from PC.
   For details on required settings, see the User's Guide stored in the supplied CD-ROM.

Notes

- Connect the AV cable when the POWER indicator lights up.
- Be aware that the system performance may be influenced, if the monitor out is set to On. Be sure to set it to Off and disconnect the AV cable.

Attaching the Dome Casing   **I**

1 **Check the dome casing inside.**
   As in the illustration, make sure the projection on the normal cover or on the clear cover is fully engaged with the notch of the dome casing.
2 **Align the rectangle white marker on the printed circuit board with the notch of the dome casing, then turn the dome casing in the direction of arrow to fasten it tightly.**
3 **Remove the protecting film on the clear cover.**

Note

When threading the cables through the side of the camera, use pliers to break off the knockout flange (with pliers, etc.).

How to remove the dome casing after installation
While pushing slightly on the hook with a minus screwdriver (or thin instrument of approx. 1 mm diameter), turn the dome casing counter clockwise.

When the PT casing separates   **J**

1 **If the camera is installed on the ceiling or wall, detach the camera unit first.**
2 **Push inwards and hold the bottom of the flat spring on the camera to avoid it springing out.**
3 **Make sure to align the little cube projection on the inside of the PT casing with the notch of the camera, as in the illustration.**
4 **Set the slits of PT casing (4 positions) closely with the flat spring of the camera, then press the PT casing down gently.**

Notes

- Make sure not to press at the top of flat spring, otherwise it may cause deformation.
- When you find the PT casing can not be easily clicked with the camera unit, check the direction of the PT casing and whether the slits are aligned with the flat spring, again. Push the casing forcedly may cause the damage.

Specifications

Compression
Video compression format   JPEG/MPEG4/H.264
Maximum frame rate   JPEG/MPEG4/H.264: 30 fps
                      (1280 × 720) (16:9 mode)

Camera
Image device   SNC-DH110/DH110T
                1/3.8 type CMOS
                Effective picture elements:
                Approx. 1,280,000
                SNC-DH210/DH210T
                1/2.8 type CMOS (Exmor)
                Effective picture elements:
                Approx. 3,270,000
Minimum illumination   SNC-DH110
                5.0 lx (AGC (max.)/50 IRE (IP))
                SNC-DH110T
                5.5 lx (AGC (max.)/50 IRE (IP))
                SNC-DH210
                2.0 lx (AGC (max.)/50 IRE (IP))
                SNC-DH210T
                2.3 lx (AGC (max.)/50 IRE (IP))

Lens
Focal length   SNC-DH110/DH110T
                2.34 mm
                SNC-DH210/DH210T
                3.3 mm
Maximum relative aperture   F2.8
View angle   SNC-DH110
              Horizontal: 80.7° / Vertical: 63.3°
              (4:3 mode)
              SNC-DH110T
              Horizontal: 79° / Vertical: 62°
              (4:3 mode)
              SNC-DH210
              Horizontal: 88° / Vertical: 65°
              (4:3 mode)
              SNC-DH210T
              Horizontal: 86° / Vertical: 64°
              (4:3 mode)
Minimum object distance   0.5 m

Interface
LAN (PoE)   10BASE-T/100BASE-TX, auto
             negotiation RJ-45
Sensor input   1 port: make contact and break
                contact switchable
Monitor out   NTSC/PAL
               1.0 Vp-p, 75 ohms, unbalanced,
               sync negative AV minijack*
               * Use AV cable with mini-plug at
               AV4 terminal.

Others
Power   IEEE802.3af compliant (PoE system)
         Class 1
Power consumption   2.4 W
Operating temperature   0°C~50°C (32°F to 122°F)
Storage temperature   −20°C to +60°C (−4°F to +140°F)
Operating humidity   20% to 80% (Non-condensing)
Storage humidity   20% to 95%
Dimensions (diameter × height)   **K**
         SNC-DH110/DH210:
         Ø106 mm × 50.5 mm
         (4 ¼ inches × 2 inches)
         SNC-DH110T/DH210T:
         Ø106 mm × 56.5 mm
         (4 ¼ inches × 2 ¼ inches)
Mass   SNC-DH110/DH210
        Approx. 160 g (5.6 oz), not including
        the cables
        SNC-DH110T/DH210T
        Approx. 170 g (6.0 oz), not including
        the cables
Supplied accessories   CD-ROM (User's Guides, and supplied
                        programs) (1)
                        Template (1)
                        Sensor input cable (1)
                        Installation Manual (this document)
                        (1)

Design and specifications are subject to change without notice.

Recommendation of Periodic Inspections

In case using this device over an extended period of time, please have it inspected periodically for safe use.
It may appear flawless, but the components may have deteriorated over time, which may cause a malfunction or accident.
For details, please consult the store of purchase or an authorized Sony dealer.